

15. DEFENCE OF THE NEST AGAINST MAN BY THE SALTWATER CROCODILE (*CROCODYLUS POROSUS* SCHNEIDER)

Several older records of nest defence against man by the Saltwater Crocodile have tended to be overlooked (Boake 1870, Shelford 1916 and Robinson 1948) and with modified behaviour resulting from several decades of heavy human exploitation of the species, the nest-guarding activities of the female have tended to be discounted. For instance Webb *et al.* (1977) found no evidence of nest-guarding of any kind in a detailed study of nesting in *C. porosus* in the Northern Territory of Australia and concluded,

"It is not known whether *C. porosus* protects the nest against predators or not."

Bustard (1967) noted the ease with which female *C. porosus* could be killed at the nest in Papua New Guinea, and Choudhury and Bustard (1979) provided recent data for the Andaman Islands (India).

We here confirm the presence of nest-guarding by the saltwater crocodile on the basis of a study extending over five nesting seasons in the Bhitarkanika Wild Life Sanctuary, Orissa (India) and cite below a recent instance of defence of the nest against man observed during collection of eggs for captive hatching and rearing of young—a management tool practiced in this Sanctuary (Bustard 1975).

The nest was located on 16 May 1976 when it was only partly constructed. It was next visited between 0800 and 1000 hours on 29 May at which time two wallows were present, approximately 30-45 cm deep, and the female crocodile was motionless in the wallow immediately adjacent to the nest which had been constructed beneath a tree. One of us (S.K.) carefully photographed the female at the nest. The female, approximately 3 m in total length, was apparently not disturbed and was

not facing the photographer. However, during photography the female uttered a guttural roar and turned towards the photographer who quietly retreated.

On 31 May a party of four including S. K. went to collect the egg sat 1200 hours. The female was again present in the wallow from which it charged at an assistant (who escaped by climbing the tree beside the nest). The three others also climbed trees. The female returned to the nest and lay on top of it. The assistant who first climbed the tree was unable to leave it as he was close to the crocodile's mouth. The party shouted but the crocodile remained on the nest, and then came right to the foot of the tree harbouring the assistant and looked upwards with open jaws. The crocodile returned to the nest and then again came back to this tree. The egg collection party were 'treed' for about thirty minutes. Eventually they threw sticks, and this combined with shouting, resulted in the female entering the first wallow and then the second wallow whereupon they made their escape. There can be no doubt that the female would have physically attacked the staff had they not been able to climb trees.

DISCUSSION

This observation on nest defence against man is noteworthy in that the crocodile persistently defended the nest against a party of four people. Bustard & Choudhury (1980) refer to actual attacks on people in recent years in the Andamans by presumed nest-guarding female *porosus*. In most, if not all parts of the range, *C. porosus*, there has been a long history of selection against females

which guard their nest against man—such females being invariably killed. This selection continuous today. Choudhury and Bustard (1979) noted the loss of 5 out of 30 nest-guarding *porosus* (17%) to poachers in the Andamans in a single year (1978).

Accordingly we may safely assume that nest-guarding was commoner in former years and has been selected against by man—the only serious enemy of large *porosus*.

Nest-guarding against man is the highest

level of nest defence possible. Like all wild animals *C. porosus* is extremely frightened of man and avoids him at every opportunity. Furthermore, the continued presence of the crocodile at the nest after man's approach (the crocodile has ample warning in the mangroves) is in itself a clear modification of normal behaviour and must be held to be defensive of the nest even without actual attack on man.

CENTRAL CROCODILE BREEDING &
MANAGEMENT TRAINING INSTITUTE,
19-4-319, LAKE DALE,
RAJENDRANAGAR ROAD,
HYDERABAD 500 264. —

H. R. BUSTARD

SALTWATER CROCODILE RESEARCH &
CONSERVATION CENTRE,
DANGMAL,
CUTTACK DISTRICT,
ORISSA,
September 2, 1980.

S. K. KAR

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